STUDIES ON THE NORTH AMERICAN DIPLURA: NEW RECORDS FROM NEW MEXICO (DIPLURA: CAMPODEIDAE)[1]

Robert T. Allen[2]

ABSTRACT: Two species of Diplura belonging to the family Campodeidae were collected in New Mexico during October, 2000. *Campodea* (s. str.) *anacua* Wygodzinsky was formerly known only from the type locality in Mexico. A new species, *Parallocampa arizoniensis,* was also collected from two different localities. The genus *Parallocampa* was previously known only from southern Mexico.

A knowledge of the distribution of both higher taxa (families, genera) and species belonging to the order Diplura in North America is in its infancy. Records for states in the US and provinces in Canada remain incompletely known. Species in the family Campodeidae had been recorded from Arizona (Allen, 1994), from caves in New Mexico (Ferguson, 1981) and from the Big Bend area of Texas (Allen, 1994). Ferguson (1981) in discussing the occurrence and distribution of Diplura found in caves in the United States listed the following taxa from New Mexico: 1) *Tricampa*; 2) an undescribed species of *Litocampa*; 3) "an undescribed genus from southeastern New Mexico. Ferguson (1990) further identified the undescribed genus from New Mexico as "Campodeid Genus A" in his key to the genera and subgenera of Campodeinae in the United States and noted its occurrence as a "Highly modified cavernicole of Carlsbad Caverns and other caves of the Guadalupe Mountains of southeastern New Mexico and southwestern Texas". The occurrence of epigean Diplura from New Mexico has remained lacking. A short collecting trip to New Mexico in October 2000, resulted in the collection some 68 specimens of Diplura representing two genera and two species previously known only from southern Mexico. The genus *Podocampa* may also have been collected but the single specimen cannot be definitely assigned to this genus at this time.

Parallocampa Silvestri 1933

The genus *Parallocampa* Silvestri has not previously been known from the United States. Thus the genus was not included in Ferguson's key to US genera (1990). The genus is characterized by the following attributes: 1) distinct, flattened pretarsal bristles which are expanded apically; 2) the presence of 5 + 5 macrochaetae on the mesonotum and 4 + 4 macrochaetae on the metanotum; 3) the presence of 7 + 7 macrochaetae on sternite I; 4) and the presence of a dorsal macrochaetae on femur III.

[1] Received February 27, 2002. Accepted April 12, 2002.

[2] Research Associate, Academy of Natural Sciences, Philadelphia.

The three specimens collected in New Mexico show some variation in the characters used by Silvestri to define the genus *Parallocampa*. The most evident difference is in the position of the macrochaetae on the mesonotum. In the illustration (Fig. III:3) given by Silvestri, the three lateral posterior setae are distinctly separated from each other along the margin of the mesonotum, whereas they are not separated in the New Mexico specimens. This difference and other slight variations are noted but do not warrant placing the species described below in a different genus at the present time.

Parallocampa arizoniensis Allen, NEW SPECIES

Description. Measurements. Length 2.6 mm (2.9-2.2), 3 specimens.

Thorax. Pronotum: 3 + 3 M (ma, la, lp). Mesonotum (Fig. 1): 5 + 5 M (ma, la, lp1-3). Metanotum (Fig. 2): 4 + 4 M (ma, lp1-3). Abdomem. Tergites I-VII (Figs. 4-6, 8) with 3 or more lateral posterior marginal setae; tergite VIII (Fig. 9) with 4 + 4 lateral posterior marginal setae. Sternite I (Fig. 3) with 7 + 7 macrochaetae. Legs. Lateral pretarsal bristles flattened and pubescent.

Type locality. New Mexico. Catron Co.: 23 miles south of intersection Hwys. 32 and 60 on Hwy. 32, under a rock.

Distribution. New Mexico. Catron Co.; Quemando Lake; Gallo Mts.; under rocks (2 paratypes): Catron Co.: 23 miles south of intersection of Hwys. 32 and 60 on Hwy. 32, under a rock (1 holotype).

Type deposition. Academy of Natural Sciences, Philadelphia.

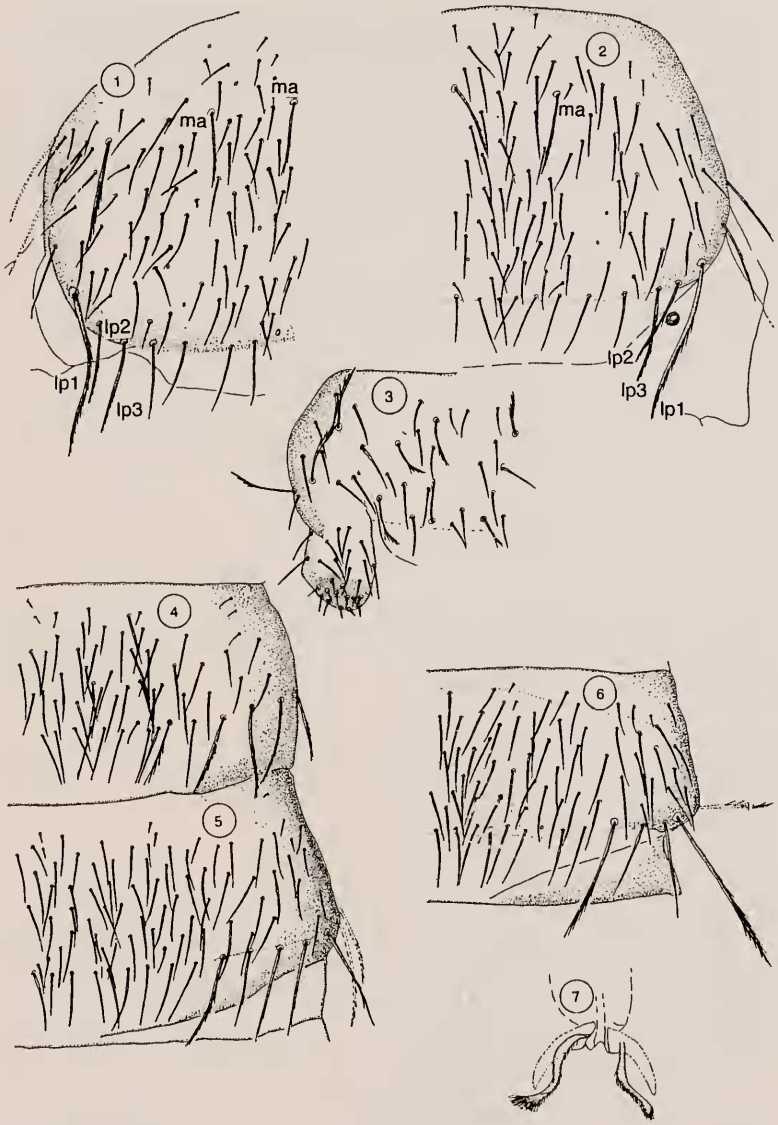
Etymology. Named for the geographical area in which the species was first found.

Discussion. *P. arizoniensis* appears to be similar to *P. azteca* Silvestri but can be readily distinguished from that species by the posterior lateral macrochaetae on abdominal tergites I and II and the closely set lateral posterior macrochaetae on the mesonotum.

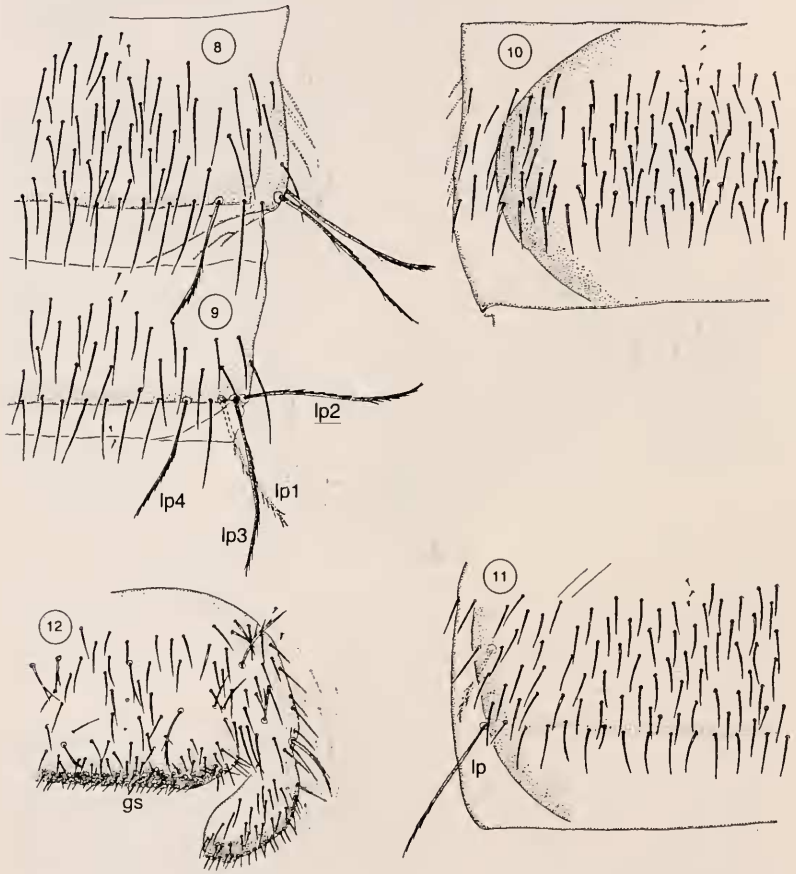
Campodea (s. str.) *anacua* Wygodzinsky 1944

The genus *Campodea* has not previously been reported from New Mexico although three *Campodea* species are currently known from southern Arizona: *C. montis* Gardner; *C. rossi* Bareth & Conde; *C. simulans* Bareth & Conde. Over 60 specimens of *Campodea* (s. str.) *anacua* Wygodzinsky were collected from two different localities. The species reported here was previously known only from Canon de las Anacuas, Nuevo Leon, Mexico. The new records represent a range extension of 400 to 500 miles north westward. The species is characterized by a combination of the following attributes: 1) absence of middle anterior macrochaetae on the abdominal tergites (Fig. 10-11); 2) the presence of a lateral anterior and lateral posterior macrochaetae on abdominal tergites VI and VII (Fig. 11); 3) and the presence of glandular setae along the posterior margin of sternite I in the males (Fig. 12).

New Mexico. Grant Co.; 12 miles north of Silver City on Hy 15; under rocks (50 specimens): Torrance Co.; Tajique Camp Ground, under rocks (14 specimens).



Figures 1-7. *Parallocampa azteca* Silv. Fig. 1, Mesonotum; Fig. 2, Metanotum; Fig. 3, Sternite I; Fig. 4, Tergite I; Fig. 5 , Tergite II; Fig. 6, Tergite IV; Fig. 7, Tarsi and pretarsal appendages.



Figures 8 - 9, *Parallocampa azteca* Silv., Fig. 8, Tergite VII; Fig. 9, Tergite VIII. Figures 10-12, *Campodea* (s. str.) *anacua* Wygod. Fig. 10 , tergite V; Fig. 11; tergite VI; Fig. 12, sternite I, male.

Podocampa ??

A single specimen was collected in Catron Co., 7.0 miles south-southeast of Apache Creek and may represent a species belonging to the genus *Podocampa.* The genus *Podocampa* is known to occur in Big Bend National Park and from two other localities in west Texas (Allen, 1994). An accurate identification will have to await the collection of additional material.

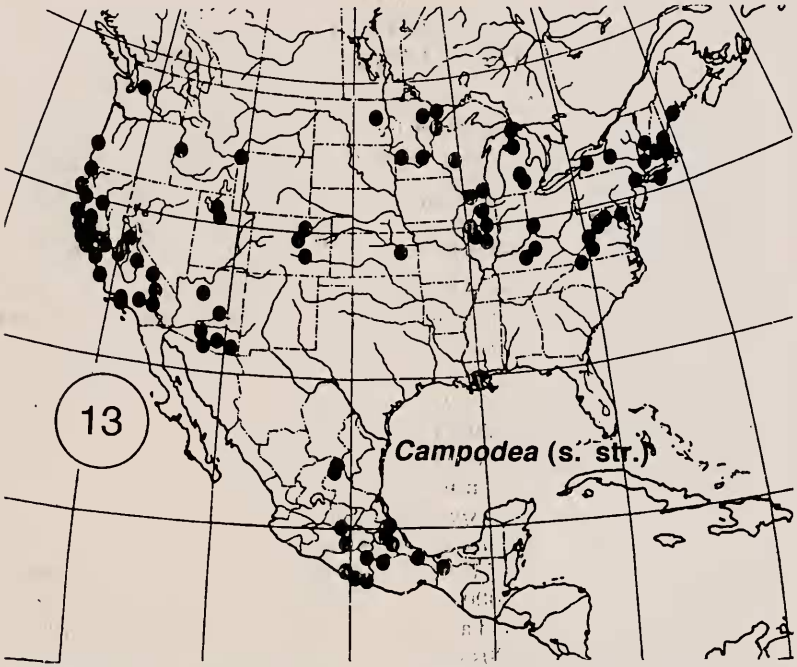


Figure 13. Map of the contiguous United States and the approximate localities from which species in the genus *Campodea* (s. str.) have been collected.

CONCLUSIONS

Figure 13 shows the 48 contiguous states and the localities from which the 23 species (including *C. anacua*) belonging to the nominate genus *Campodea* have been collected. It is obvious that a great deal of work remains to be done before we have an accurate image concerning the distribution of this genus. The discovery of the genus *Parallocampa* in New Mexico indicates that additional collecting is certainly warranted and will result in the addition of new and valuable distribution records.

LITERATURE CITED

Allen, R. T. 1994. An Annotated Checklist and Distribution Records of the subfamily Campodeinae in North America (Insecta: Diplura: Rhabdura: Campodeidae). Trans. Amer. Entomol. So. 120:181-208.

Ferguson, L. M. 1981. Cave Diplura of the United States. Proceed. Eighth International Congress of Speleology (Bowling Green, KY), 1:11-12.

Ferguson, L. M. 1990. Insecta: Diplura (pp. 951-963). In Dindal, D. L. (Ed.). Soil Biology Guide, 1349 pp.

Silvestri, F. 1933. Nuovo Contributo alla Conoscenza dei Tisanuri de Messico. Bull. Lab. Zool. gen. agr. Portici 27:127-144.

Wygodzinsky, P. 1944. Contribuicao ao conhecimento da familia Campodeidae (Entolrophi, Insecta) do Mexico. Ann. Escuela nac. Ci. bidol. 3:367-404.